

WHAT IS CLAIMED IS:

1 1. A method of operating a telecommunications system comprising a plurality
 2 of telecommunication nodes interconnected by communication channels, each node
 3 comprising plural board units, each board unit providing a data processing functionality,
 4 the method comprising
 5 dynamically configuring the functionality of at least one node of the
 6 telecommunication system by installing or modifying software in at least one board unit
 7 of said at least one node.

1 2. A method according to claim 1, wherein the configuring occurs in response
 2 to detecting a need for a change in the functionality of the telecommunications system.

1 3. A method according to claim 1, wherein said configuring comprises the step
 2 of software reconfiguring a functionality type of one or several board units of the at
 3 least one node during the operation of the telecommunications system.

1 4. A method according to claim 3, wherein said configuring comprises the step
 2 of software configuring at least one application processor or an application processor
 3 module on at least one board unit.

1 5. A method according to claim 1, wherein said configuring comprises the step
 2 of software configuring one or several board units of the at least one node during the
 3 start up stage of the telecommunications system.

1 6. A method according to claim 5, wherein said configuring comprises the step
 2 of software configuring at least one application processor or an application processor
 3 module on the at least one board unit.

1 7. A method according to claim 1, wherein the telecommunications system is a
 2 cellular radio telecommunications network and said nodes include a base station node, a
 3 base station controller node, and a mobile switching center node.

1 8. The method of claim 7, wherein the at least one board unit handles ATM

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cells.

9. A method according to claim 1, further comprising loading the board unit of the node with a plurality of software versions which are capable of accomplishing different tasks in the telecommunications systems.

10. A telecommunications system, comprising
at least one base station node,
a base station controller node for controlling said at least one base station node,
a switching center node operationally connected to said base station controller node for handling the traffic from and to said at least one base station node, wherein
at least one of the nodes provides functionality for use in the operation of the telecommunications system, and
a software configurable board unit providing a general purpose resource is implemented within said at least one node, the arrangement being such that the functionality of the board unit can be changed in accordance with particular requirements of the telecommunications system.

11. A telecommunications system according to claim 10, wherein the traffic is handled by means of ATM connections.

12. A telecommunications system according to claim 11, wherein the board unit comprises a software-configurable ATM Multifunction Board.

13. A telecommunications system according to claim 12, wherein the ATM Multifunction Board comprises a board processor and at least one application processor.

14. A telecommunications system according to claim 12, wherein the ATM Multifunction Board comprises application processor modules, each module comprising one or more application processors and an interface logic.

15. A telecommunications system according to claim 10, wherein said at least one node comprises plural board units forming a pooled resource.

1 16. A telecommunications system according to claim 10, wherein said at least
2 one node comprises plural board units arranged within a device rack.

1 17. A board unit, comprising
2 an ATM interface,
3 a board processor unit,
4 an application processor,
5 wherein the arrangement of the board unit is such that wherein the board
6 processor unit selectively changes a functionality type of the application processor,
7 whereafter the application processor provides a changed functionality type towards the
8 ATM interface.

1 18. A board unit according to claim 17, further comprising a direct UTOPIA
2 bus which connects the ATM interface with the application processor.

1 19. A board unit according to claim 17, further comprising a direct UTOPIA
2 bus which connects the ATM interface with the board processor unit.

1 20. A board unit according to claim 17, further comprising a direct UTOPIA
2 bus which connects the board processor unit with the application processor.

1 21. A board unit according to claim 17, comprising plural application
2 processors formed by application processor modules comprising one or more
3 subprocessors and interfacing logic.

1 22. A board unit according claim 17, wherein the board unit is a software
2 configurable multifunction board capable of forming at least one of the following
3 resources: DHT board, CODEC board, EC board, UADP board, PADP board, IPR
4 board, ALT board or SMX board.

1 23. A device rack for a telecommunications node, comprising
2 plural multifunction board units,
3 an interface towards the node,
4 connections between the multifunction board units and the interface, wherein

5 a functionality type of at least one of the multifunction boards can be changed by
6 a software change in accordance with the needs of a telecommunications system in
7 which the node operates.

1 24. A device rack according to claim 23, wherein a combination of the
2 different functionalities are provided by the multifunction board units, the combination
3 of the functionalities being reconfigurable under control of a control unit during the
4 operation of the telecommunications node.

1 25 A method of operating a node of a cellular telecommunications network, the
2 node comprising plural board devices, each of the plural board devices having at least
3 one functional processor, differing types of telecommunications functionalities being
4 distributed among functional processors of the node in accordance with an existing
5 functionality distribution; the method comprising:

6 (1) detecting a change in resource requirements in the node; and

1 (2) dynamically changing the functionality type of at least one of the functional
2 processors during operation of the node and in response to detection of the change in
3 requirements, thereby providing a changed functionality distribution within the node.

1 26 The method of claim 25, wherein step (2) involves changing the
2 functionality types of all functional processors on selected board device of the node.

1 27 The method of claim 25, wherein step (2) involves changing the
2 functionality types of all functional processors on plural board devices of the node.

1 28 The method of claim 25, wherein the node further comprises a node main
2 processor and a switch through which the node main processor and plural board devices
3 are connected, the method comprising using the node main processor to perform at least
4 one of steps (1) and (2).

1 29 The method of claim 28, wherein the node main processor downloads a new
2 functionality type to at least one of the functional processors during operation of the
3 node and in response to detection of the change in requirements.

1 30. The method of claim 25, wherein the node is one of a base station node, a
2 base station controller node, and a mobile switching center node.

1 31. The method of claim 25, wherein the node is a base station controller node,
2 and wherein in step (2) the functionality type of at least one of the functional processors
3 is changed from one of the following functionalities to another of the following
4 functionalities: (1) macro diversity handover combination/splitting; (2) coder/decoder;
5 (3) echo canceller; (4) unrestricted digital information adapter for circuit data; (5)
6 packet data adapter; (6) internet packet router; (7) AAL link termination; (8) service
7 multiplexer.

1 32. A node of a cellular telecommunications network comprising:
2 a node main processor;
3 plural board devices, each of the plural board devices having at least one
4 functional processor, differing types of telecommunications functionalities being
5 distributed among functional processors of the node in accordance with an existing
6 functionality distribution;
7 a switch which interconnects the node main processor and the plural board
8 devices;
9 wherein upon detection of a change in resource requirements by the node, the
10 node main processor dynamically changes the functionality type of at least one of the
11 functional processors during operation of the node and in response to detection of the
12 change in requirements, thereby providing a changed functionality distribution within
13 the node.

1 33. The apparatus of claim 32, wherein the node main processor changes the
2 functionality types of all functional processors on selected board device of the node.

1 34. The apparatus of claim 32, wherein the node main processor changes the
2 functionality types of all functional processors on plural board devices of the node.

1 35. The apparatus of claim 32, wherein the node is one of a base station node, a
2 base station controller node, and a mobile switching center node.

1 36. The apparatus of claim 32, wherein the node is a base station controller
2 node, and wherein the node main processor changes) the functionality type of at least
3 one of the functional processors from one of the following functionalities to another of
4 the following functionalities: (1) macro diversity handover combination/splitting; (2)
5 coder/decoder; (3) echo canceller; (4) unrestricted digital information adapter for circuit
6 data; (5) packet data adapter; (6) internet packet router; (7) AAL link termination; (8)
7 service multiplexer.

1 37. A node of a cellular telecommunications network comprising:
2 a node main processor;
3 plural board devices, each of the plural board devices having at least one
4 functional processor;
5 a switch which interconnects the node main processor and the plural board
6 devices;
7 wherein the node main processor allocates differing types of telecommunications
8 functionalities among the functional processors of the node so that there is an
9 essentially equal bandwidth demand for all board devices.

1 38. The apparatus of claim 37, wherein the node is one of a base station node, a
2 base station controller node, and a mobile switching center node.

1 39 A method of operating a node of a cellular telecommunications network, the
2 node comprising plural board devices, each of the plural board devices having at least
3 one functional processor, the method comprising allocating differing types of
4 telecommunications functionalities among the functional processors of the node so that
5 there is an essentially equal bandwidth demand for all board devices.

1 40 The method of claim 39, wherein the node main processor downloads a new
2 functionality type to at least one of the functional processors during operation of the
3 node to provide the essentially equal bandwidth demand for all board devices.

1 41. The method of claim 39, wherein the node is one of a base station node, a
2 base station controller node, and a mobile switching center node..